

GAURANG KHURANA

COMPUTER SCIENCE AT THE UNIVERSITY OF WATERLOO

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TECHNICAL SKILLS

Languages & Frameworks: Python, C++, Java, JavaScript/TypeScript, SQL | FastAPI, React, Next.js, Node.js, Flask, Django, GraphQL, Tailwind CSS

AI/ML: LLM APIs (OpenAI, Anthropic Claude, Gemini), TensorFlow, Scikit-learn, LangChain, RAG, Vector Embeddings, Pandas, NumPy

Databases & Infrastructure: PostgreSQL, SQLite, Neo4j, Pinecone, ChromaDB | AWS (EC2), Docker, Azure, Vercel, Render, Git, CI/CD, GitHub Actions

EDUCATION

University of Waterloo

Sept 2024 – Aug 2029 | Waterloo, ON

Bachelor of Computer Science (Honours) and Statistics Minor

Honors & Awards:

Elite & President's Scholarship Recipient (\$50,000);

Group I Distinction — Waterloo Euclid Mathematics Contest;

Bloomberg Market Concepts (BMC) Certification

PROFESSIONAL EXPERIENCE

Royal Bank of Canada (RBC)

May 2026 – Present | Toronto, ON

Technical Systems Analyst

- Built real-time Power BI dashboards integrated with ServiceNow REST API to consolidate ticket metrics across teams, eliminating ~65% of manual reporting workflows and enabling daily KPI tracking across 10+ service categories.
- Provided hands-on technical support across Microsoft 365 (Teams, SharePoint, Outlook, Azure AD) and ServiceNow, resolving incidents and service requests while documenting resolution patterns to reduce repeat ticket volume by ~25%.
- Analyzed ticket routing patterns and SLA compliance data to identify resolution bottlenecks, streamlining incident triage and escalation workflows and improving average response time by ~30%.

DataKnobs

Sept 2025 – Dec 2025 | Seattle, WA

Software Engineer Intern

- Developed LLM-powered GEO evaluation pipelines (Python, FastAPI) analyzing webpage performance across generative search systems, cutting manual review cycles by ~60%.
- Implemented RAG with vector embeddings to ground GEO analyses in verified source content, improving consistency and reducing hallucinations.
- Built backend orchestration and scoring frameworks (batch runs, caching, retries, logging) enabling systematic benchmarking and controlling inference cost at scale.

Marshall Clinical Research Consulting

May 2025 – Aug 2025 | Edmonton, AB

Software Engineer Intern

- Automated addiction-research data pipelines (Python, Pandas, FastAPI), reducing manual data preparation time by ~40%.
- Spearheaded semantic search adoption using vector embeddings to accelerate literature synthesis across substances and demographics.
- Designed a privacy-first conversational chatbot (LLM APIs, structured prompts, safety rules) for anonymous addiction awareness exploration.

Toshniwal Advisory Services

Jan 2025 – Apr 2025 | Remote

Quantitative Trading Intern

- Built a centralized portfolio analytics platform (FastAPI, Next.js) consolidating multi-strategy portfolios, reducing reconciliation time by ~50%.
- Led sector exposure decomposition and rotation logic rollout, surfacing concentration risk and contributing to ~2% higher returns.
- Designed an LLM-assisted analytics layer with Pinecone-backed vector search to flag abnormal concentration and portfolio drift.

PROJECTS

QuantCore: High-Performance Derivatives Pricing Engine

C++, Python (pybind11), FastAPI, WebSockets, Next.js

- Engineered a real-time C++ options pricing engine with pybind11 bindings, computing Black-Scholes and Monte Carlo valuations with validated Greeks at 4x throughput over vectorized NumPy, up to 69x via a custom Apple Metal GPU kernel.
- Built a FastAPI WebSocket layer streaming live price recalculations to a Next.js dashboard at sub-5ms p99 latency, supporting volatility and rate shock scenario analysis.
- Implemented VaR and stress-testing modules validated against 851 days of real market data with a 4.5% breach rate versus the 5% theoretical target.

BulkPilot: Embedded Shopify App — Bulk Price Editor with 1-Click Rollback *Shopify GraphQL Admin API, React Router, Polaris*

- Built an embedded Shopify app (React Router, Polaris, App Bridge) to bulk-edit product-variant prices across a merchant's catalog with a live before/after preview and one-click rollback.
- Applied updates via the GraphQL Admin API (productVariantsBulkUpdate) chunked to Shopify's 250-variant limit, with Prisma snapshot-based rollback restoring exact pre-edit prices and per-variant partial-failure handling.